CLAIMS

What is claimed is:

1.   A method for routing data packets in a network, comprising grouping
routing-table entries into numbered clusters for lookup of a routing-table entry based on
5   cluster number and destination address.

2.   A method as recited in claim 1, further comprising assigning a cluster
number to a data packet.

10   3.   A method as recited in claim 2, further comprising routing said data packet
based on a routing-table entry selected from a group of routing-table entries based on
said cluster number and a destination address associated with said data packet.

4.   A method as recited in claim 3, further comprising replacing said cluster
15   number of said data packet with a new cluster number when said packet is routed.

5.   A method as recited in claim 2, further comprising matching the cluster
number associated with said data packet to a corresponding cluster number associated
with said routing-table entries.

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6.   A method as recited in claim 5, further comprising searching routing-table
entries associated with said cluster number using a destination address associated with

said data packet as an index.

7.   A method as recited in claim 6, further comprising routing said data packet using a routing-table entry corresponding to said destination address.

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8.   A method as recited in claim 7, further comprising replacing said cluster number of said data packet with a new cluster number when said packet is routed.

9.   A method as recited in claim 1, further comprising assigning a Cluster Number (Incoming) and a Cluster Number (Outgoing) to each routing table entry.

10.   A method as recited in claim 9, further comprising assigning a Cluster Number (Incoming) to said data packet.

11.   A method as recited in claim 10, further comprising routing said data packet based on a routing-table entry selected from a group of routing-table entries corresponding based on said Cluster Number (Incoming) and a destination address associated with said data packet.

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12.   A method as recited in claim 11, further comprising replacing said Cluster Number (Incoming) of said data packet with the Cluster Number (Outgoing) associated with said selected routing-table entry when said data packet is routed.

13. A method as recited in claim 9, further comprising matching the Cluster Number (Incoming) associated with said data packet to a corresponding Cluster Number (Incoming) associated with said routing-table entries.

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14. A method as recited in claim 13, further comprising searching routing-table entries associated with said Cluster Number (Incoming) using a destination address associated with said data packet as an index.

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15. A method as recited in claim 14, further comprising routing said data packet using a routing-table entry corresponding to said destination address.

16. A method as recited in claim 15, further comprising replacing said Cluster Number (Incoming) of said data packet with the Cluster Number (Outgoing) associated

15 with said corresponding routing-table entry when said data packet is routed.

17. A method for routing data packets in a network, comprising:

grouping routing-table entries into numbered clusters for lookup of a routing-table entry based on cluster number and destination address; and

20   routing a data packet based on a routing-table entry selected from a group of routing-table entries based on a cluster number and a destination address associated with said data packet.

18.   A method as recited in claim 17, further comprising replacing said cluster number of said data packet with a new cluster number when said packet is routed.

19.   A method as recited in claim 17, further comprising matching the cluster number associated with said data packet to a corresponding cluster number associated with said routing-table entries.

20.   A method as recited in claim 19, further comprising searching routing-table entries associated with said cluster number using a destination address associated with said data packet as an index.

21.   A method as recited in claim 20, further comprising routing said data packet using a routing-table entry corresponding to said destination address.

22.   A method as recited in claim 21, further comprising replacing said cluster number of said data packet with a new cluster number when said packet is routed.

23.   A method as recited in claim 17, further comprising assigning a Cluster Number (Incoming) and a Cluster Number (Outgoing) to each routing table entry.

24.   A method as recited in claim 23, further comprising assigning a Cluster Number (Incoming) to said data packet.

25.   A method as recited in claim 24, further comprising routing said data

packet based on a routing-table entry selected from a group of routing-table entries

corresponding based on said Cluster Number (Incoming) and a destination address

5   associated with said data packet.

26.   A method as recited in claim 25, further comprising replacing said Cluster

Number (Incoming) of said data packet with the Cluster Number (Outgoing) associated

with said selected routing-table entry when said data packet is routed.

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27.   A method as recited in claim 23, further comprising matching the Cluster

Number (Incoming) associated with said data packet to a corresponding Cluster

Number (Incoming) associated with said routing-table entries.

15   28.   A method as recited in claim 27, further comprising searching routing-table

entries associated with said Cluster Number (Incoming) using a destination address

associated with said data packet as an index.

29.   A method as recited in claim 28, further comprising routing said data

20   packet using a routing-table entry corresponding to said destination address.

30.   A method as recited in claim 29, further comprising replacing said Cluster Number (Incoming) of said data packet with the Cluster Number (Outgoing) associated with said corresponding routing-table entry when said data packet is routed.

31.   A method for routing data packets in a network, comprising:

grouping routing-table entries into numbered clusters for lookup of a routing-table entry based on cluster number and destination address;

matching a cluster number associated with a data packet to a corresponding cluster number associated with said routing-table entries; and

routing said data packet based on a routing-table entry selected from a group of routing-table entries based on the cluster number and the destination address associated with said data packet.

32.   A method as recited in claim 31, further comprising replacing said cluster number of said data packet with a new cluster number when said packet is routed.

33.   A method as recited in claim 31, further comprising searching routing-table entries associated with said cluster number using a destination address associated with said data packet as an index.

34.   A method for routing data packets in a network, comprising:

grouping routing-table entries into clusters;

assigning a Cluster Number (Incoming) and a Cluster Number (Outgoing) to each routing table entry;

5   assigning a Cluster Number (Incoming) to a data packet;

matching the Cluster Number (Incoming) associated with said data packet to a corresponding Cluster Number (Incoming) associated with said routing-table entries;

searching routing-table entries associated with said Cluster Number (Incoming) of said data packet using a destination address associated with said data packet as an

10   index; and

routing said data packet based on a routing-table entry corresponding to the destination address associated with said data packet.

35.   A method as recited in claim 34, further comprising replacing said Cluster Number (Incoming) of said data packet with the Cluster Number (Outgoing) associated

15   with said selected routing-table entry when said data packet is routed.

36.   A method for routing data packets in a network, comprising:

grouping routing-table entries into clusters;

20   assigning a Cluster Number (Incoming) and a Cluster Number (Outgoing) to each routing table entry;

assigning a Cluster Number (Incoming) to a data packet;

matching the Cluster Number (Incoming) associated with said data packet to a

corresponding Cluster Number (Incoming) associated with said routing-table entries;

searching routing-table entries associated with said Cluster Number (Incoming)

of said data packet using a destination address associated with said data packet as an

5   index;

routing said data packet based on a routing-table entry corresponding to the

destination address associated with said data packet; and

replacing said Cluster Number (Incoming) of said data packet with the Cluster

Number (Outgoing) associated with said selected routing-table entry when said data

10   packet is routed.